



NAVY DEPARTMENT

## BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar. (MC). U.S.N.

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Precursors of Gastric Carcinoma: It has been thought that gastric carcinoma may be anteceded by one of the following: (1) benign gastric ulcer, (2) benign gastric adenoma, and (3) atrophic gastritis.

Benign Ulcer: Some have contended that 60 per cent of all benign ulcers would degenerate into malignant ones, and others that benign ulcers never become malignant.

When benign gastric ulcer, as evidenced roentgenographically by the presence of a niche or gastroscopically by a crater, is watched over any period of time, it will be seen that it will not become malignant. In rare cases in which malignancy seemed to have developed, it has been possible to prove by gastroscopic examination that the ulcer was malignant from the very onset. From 3 to 4 per cent of all adults die from gastric carcinoma; therefore, one must expect that from 3 to 4 per cent of all patients with ulcer also will die from gastric carcinoma. That is the figure accepted by many pathologists for the "malignant degeneration" of benign gastric ulcer. It is amazing how rarely a true benign ulcer has been present years before the development of a gastric carcinoma.

From the author's personal experience he has reluctantly drawn the conclusion that not only does benign ulcer not predispose to gastric carcinoma, but even that the ulcer-bearing stomach shows a curiously low incidence of gastric cancer. It appears to the author that the ulcer-bearing stomach possesses some protective power against gastric carcinoma.

If there were a frequent transition from benign to malignant gastric ulcer, the benign ulcer in older people would have to be treated as a gastric cancer, with early resection. Since this is not so, however, conservative treatment of the benign ulcer of old age is justified. Benign ulcer is seen frequently in the late decades of life; the first attacks usually but not always occur in the earlier decades. Recurrences, however, continue, and it is not rare to observe ulcer relapses in the ninth decade. Therefore, the differential diagnosis of these two diseases is of the greatest practical importance. In general, if a patient formerly had a proven benign ulcer of the stomach or duodenum, the new gastric ulcer is most likely benign also.

Benign Adenoma: Benign adenomas (often called "polyps") of the stomach are not rare. They are found during gastroscopic examinations in from 2 to 4 per cent of all cases. One single adenoma, or several, or a great number (polyposis ventriculi) may be seen. Most adenomas are very small, a few millimeters only in diameter. Since they are usually

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soft they escape detection at gastroscopy. The larger ones produce a round and smooth filling defect readily recognized on x-ray examination of the stomach. They do not often cause symptoms but occasionally may bleed, however. Hemorrhage from gastric adenoma is rare, and certainly much rarer than hemorrhage from benign submucosal tumor of the stomach.

Grier Miller has shown that gastric carcinoma may develop from benign adenoma. Undoubtedly, this tumor is a precursor of cancer. It would appear, then, that each gastric polyp should be removed whenever it is discovered; yet such a procedure does not seem justified. The great majority of benign adenomas remain benign and never start to invade the surrounding tissue. If it were possible to extirpate them locally as in polyps of the rectum, there would be no hesitation in doing just that in every case. However, in order to remove gastric adenomas the abdomen must be opened. When this is done, small and even medium-sized adenomas cannot be detected upon palpation of the stomach. In large tumors local excision is possible; in small ones which cannot be found by palpation the stomach must be opened, and even then it may be impossible to discover the small tumor which in the air-distended stomach at gastroscopy had been seen so clearly; resection may become necessary. These major procedures would be justified if a great number of benign adenomas were known to develop into carcinomas. This is not so, however, since malignant degeneration of a benign polyp is a rare exception. It appears, therefore, that only large benign adenomas with a diameter of 2 cm. and over should be extirpated as a matter of routine.

Naturally, the frequent small ones must be watched most closely and if they are seen to grow, surgery is indicated at once. This observation often is possible only by gastroscopy.

In cases of extensive polyposis, the determination of what procedure to follow can be very difficult. If the lesion is restricted to the distal portion of the stomach, especially to the antrum, resection should be advised at once. If the entire stomach is involved, so that total gastric resection would be necessary in order to remove all adenomas, careful watching is indicated. X-ray examination should be done at least every three months. Total gastric resection is too formidable a procedure to be performed without absolute necessity.

Atrophic Gastritis: Benign ulcer and benign adenoma of the stomach are well known conditions. Atrophic gastritis, however, is not well known, and because its clinical significance is contested, a short description follows:

Although atrophic gastritis may involve the whole stomach, it is usually most marked in its upper portions. Microscopically, three features characterize beginning atrophy, (1) compression of the neck of the gastric glands



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by inflammatory exudate with formation of retention cysts, (2) cellular infiltration immediately above the muscularis mucosae with gradual destruction of the bottom of the glands, and (3) proliferation of the pits. In late stages the gastric glands are completely destroyed; within the edema and the cellular infiltration of the connective tissue only proliferating pits are seen. Their epithelium, as well as the surface epithelium, shows often a curious metaplasia, the characteristic gastric epithelium being replaced by intestinal epithelium containing a great number of goblet cells.

Gastroscopecally, thinning and greenish-gray discoloration of the atrophic mucosa are seen with the appearance of bluish blood vessels as soon as the atrophic changes have become marked.

Much argument exists about the clinical significance of this anatomic picture. Some contend that there are no symptoms at all, that abdominal and other symptoms found together with the anatomical picture of atrophic gastritis are accidental, chiefly of nervous origin, and not dependent upon the gastritis. Others admit that symptomless cases of atrophic gastritis do occur, and that other cases exist in which the symptoms may subside and recur irregularly, but that existing symptoms are due to the atrophic gastritis. These symptoms, they claim, are either local or general. The local symptoms consist of epigastric pain, pressure and fullness, often combined with nausea and vomiting. Sometimes the general symptoms, namely, spells of profound weakness and fatigue combined with anorexia and weight loss dominate the disease picture. Paresthesias, numbness, tingling and sore tongue, when present, are suggestive of pernicious anemia. The anatomical picture, in its most severe form, is seen in most cases of pernicious anemia and in many cases of gastric carcinoma. Similar pictures may be seen in persons without these diseases. Milder patchy atrophic gastritis is not infrequently seen also. On the whole, atrophic gastritis is a disease of advanced age, but it is not rare in earlier life. The total number observed decreases in the seventh decade of life, probably because there is a decrease in the number of people alive in this age group. In an analysis of 35 consecutive cases of atrophic gastritis, the following age distribution was found:

20-29 years.....	3 patients
30-39 years.....	5 patients
40-49 years.....	9 patients
50-59 years.....	10 patients
60-69 years.....	8 patients

As can be seen, the incidence of atrophic gastritis in this series is highest in the cancer age; and as mentioned before, the most severe atrophic changes are often found in stomachs which contain carcinoma.



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The author believes that the available evidence is in favor of the existence of a close etiologic relationship in many cases between atrophic gastritis and cancer.

Staemmler expressed the view that chronic gastritis was not more frequent in the carcinomatous stomach than in the "normal stomach" of the same age group. He thought that one of two conclusions must be drawn: either that chronic atrophic gastritis is so frequent in advanced age that it is without significance in the development of gastric carcinoma, or that chronic atrophic gastritis is so frequent in advanced age that this very frequency would explain the great inclination of the stomach toward cancer formation.

Warren and Meissner found that many of the cancerous stomachs examined did not show any truly inflammatory changes. In their opinion, only the severe stage of chronic gastritis with marked epithelial alterations shows the necessary criteria for premalignancy. They thought it could be assumed that some gastric cancers arise from premalignant lesions such as true atrophic gastritis.

The gastroscopic observations of the condition of the gastric mucosa in 48 cases of gastric carcinoma confirm Warren and Meissner's observation that many carcinoma-bearing stomachs do not exhibit true gastritis. The mucosa was normal in 10; and showed evidences of superficial gastritis in 8, hypertrophic gastritis in 5, and atrophic gastritis in 25.

In most of these 48 cases, tissue microscopic studies became possible, and an outstandingly close agreement was found to exist with the gastroscopic observations. If atrophic gastritis was seen, it was so extensive and severe that every comparison with other diseases, except pernicious anemia, and with the normal stomach of advanced age had to be rejected.

The conclusion was reached that severe atrophic gastritis is so frequent in gastric carcinoma that a mere coincidence can be excluded. But, does the carcinoma produce the gastritis, or does the gastritis produce the carcinoma, or, are both diseases due to some common cause?

It is understandable that a decaying carcinoma might produce gastritis but not that a pea-sized adenoma could produce gastritis. In a gastroscopic study of 1814 patients without atrophic gastritis and 353 with atrophic gastritis, benign adenomas were found to occur seven times as often in the group with gastritis than in the group without gastritis. Thus, it is considered obvious that atrophic gastritis precedes tumor formation.

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The final proof, however, is possible only by clinical observation. If atrophic gastritis really is able to produce tumors in relation to its severity and the number of precancerous elements it contains, then such tumors necessarily must be most frequent in that disease which almost always is combined with most profound atrophic gastritis, namely, pernicious anemia. Recent investigation has proved that this really is so - that gastric tumors occur much more frequently in patients with pernicious anemia than in other people. In the gastroscopic study just mentioned, 15 adenomas were found in patients without atrophic gastritis (.83 per cent), 15 adenomas were found in 310 patients with uncomplicated atrophic gastritis (4.8 per cent), but six adenomas were found in 43 patients with pernicious anemia (14 per cent). The difference between the pernicious anemia patients and the patients with uncomplicated atrophic gastritis is readily explained by the dissimilar extent of the preadenomatous lesion.

For a long time it had been suspected that in patients with pernicious anemia more gastric carcinomas develop than in other people. The final proof was presented by Rigler and Kaplan. They investigated 43,021 consecutive autopsies, in which 293 cases of pernicious anemia were found in persons over the age of 45. In this group, 36 cases of carcinoma were present, an incidence of association of 12.3 per cent. This is over three times as great an incidence of carcinoma of the stomach as in the remainder of the same age group of the autopsy group. They were not sure, however, that of all factors in pernicious anemia it was the atrophic gastritis which was responsible for the frequent carcinoma formation. If these results are compared with those of the study cited above concerning benign adenomas, it is difficult to assume that any other factor but the atrophic gastritis of pernicious anemia could have been responsible for the frequent gastric carcinomas of pernicious anemia.

Such a study is difficult in atrophic gastritis without pernicious anemia because atrophic gastritis is not a well known disease entity, readily recognized at autopsy. Yet some statistics exist already which suggest strongly that chronic atrophic gastritis predisposes to gastric carcinoma.

Uslund in Norway studied 125 patients in whom gastritis had been diagnosed from 5 to 12 years previously. Not less than 18 of them, 15 per cent, developed a gastric carcinoma. This figure is at least three times higher than should be expected from the law of averages.

Kapp in Switzerland analyzed 157 cases in which the diagnosis of gastritis had been made between 1915 and 1920. Twenty-one of these or 13.4 per cent were treated at least five years later under the diagnosis of gastric carcinoma. This incidence of gastric carcinoma is three times that in other people.

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The only objection which can be raised against these statistics is that the diagnosis of gastritis was made without the use of the gastroscope. The fact still remains that people who suffered from some chronic stomach disease other than benign ulcer developed gastric carcinoma three times as often as other people.

Formerly, it was considered that gastric carcinoma usually developed in perfectly healthy people. This, however, is not true. At least one-third of all patients with gastric carcinoma have suffered from some kind of epigastric distress for many years before the development of the carcinoma, and yet they have had no ulcer. What other disease but chronic gastritis could have been responsible for such symptoms?

More and more cases are presented in which the atrophic gastritis - gastric carcinoma sequence is indubitable. The evidence points to the conclusion that chronic atrophic gastritis is a most important precursor of gastric carcinoma.

If the atrophic gastritis in patients with and without pernicious anemia could be closely watched, very small and symptomless carcinomas in an early stage could be discovered.

Rigler and Kaplan have carried out such a study in their patients with pernicious anemia. Two hundred and eleven patients with pernicious anemia underwent x-ray examination; in 20 per cent only one examination was made, but in the remaining 80 per cent there were multiple examinations. Pains-taking efforts were made, with constant use of gastroscopy, to reveal not only carcinoma, but also benign polyps. In the 211 cases they found 15 benign tumors (7.1 per cent) and not less than 17 carcinomas (8 per cent). The repeated examinations to which these patients were subjected constitute the chief basis for the finding of so high an incidence. The ideal was fulfilled in their study, namely, the diagnosis of beginning symptomless carcinomas by carefully watching the recognized precancerous condition.

The author is convinced that similar results could be obtained if cases of uncomplicated atrophic gastritis were watched closely.

The difficulty consists only in the discovery of chronic atrophic gastritis. This disease often causes only vague abdominal symptoms. The symptoms may be transitory and may be absent for months or even years. Only one study procedure exists to find all possible cases of atrophic gastritis, and that is gastroscopy. Since gastroscopy in the hands of the well trained examiner is a harmless and quick office procedure, such examinations even



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In any person in whom histamine-proved anacidity is found at any time during his life, the precancerous condition of atrophic gastritis should be suspected. In order to find the highest number of cases of atrophic gastritis, every person with vague and mild transient epigastric distress should be examined gastroscopically. Such persons should be studied regularly, however, and given careful and repeated x-ray examination. The spot-film relief technic must be used. At least four times a year an x-ray study of the stomach relief should be undertaken. (Geriatrics, March-April '47 - R. Schindler)

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Clinical Features of Patent Ductus Arteriosus with Special Reference to Cardiac Murmurs: Now that certain types of congenital heart disease may be treated successfully by surgery, accurate diagnosis is no longer a purely academic or intellectual endeavor.

Inasmuch as simple bedside findings will always remain the bulwark of clinical diagnosis, it seemed appropriate to review a group of well-authenticated cases of patent ductus arteriosus and to analyze some of the features they presented, particularly those obtained by auscultation. It is clear that in the great majority of instances the finding that initiates any consideration on the part of the physician of the possibility of patent ductus arteriosus will be the detection of a cardiac murmur. It is well known that the classical "machinery murmur" in the pulmonary area is fairly characteristic of patent ductus arteriosus. With increasing experience it has become quite evident, however, that the murmur is by no means always characteristic. It often has no machinery quality. It is now necessary to recognize cases in which there are atypical murmurs and to become familiar with the general range of the loudness and the peculiarity of the murmurs. It might be asked whether patent ductus arteriosus may ever be present without any murmurs at all, or with only a systolic component.

The cases of 37 patients with patent ductus arteriosus, in which the diagnosis was confirmed at operation by Dr. R. E. Gross, were analyzed. In all but one of these the patients were over 12 years old, the age ranging from 7 to 47 years, the average being 24 years.

Murmurs. Of first interest was the intensity of the murmur. The loudness was indicated by gradations of from 1 to 6. In 25 instances in which accurate estimation of the intensity of the murmur by a competent observer was made preoperatively, the average intensity of the systolic component was found to be 4. It is of considerable interest that 11 were of Grade 3

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intensity, and one was even called Grade 2-. This means that many cases showed what ordinarily is designated as a moderate systolic murmur and that rarely only a slight murmur was present. The average intensity was found to be Grade 3.1 in 21 instances in which the intensity of the diastolic component was carefully noted preoperatively. In no instance was the diastolic component louder than the systolic; occasionally it was of the same intensity but generally it was fainter by one or more gradations. A peculiarity commonly observed was that the murmur appeared to become louder during the latter part of systole, enveloping the second heart sound, and continuing with decreasing intensity during diastole. In 5 cases the diastolic murmur was faint enough to be called Grade 2, and in one instance it was only Grade 1. In fact, the diastolic murmur in this latter case was so faint that it could be detected only after prolonged and undisturbed auscultation. Although there was no instance in this series in which no murmur at all could be heard, rare cases of this type have been reported. In another instance the murmur was found to disappear during the last month before death.

The murmur was generally loudest in the so-called pulmonary area (second left interspace) but occasionally had its maximum intensity in the first or third left interspace. When it was very loud, it was widely distributed, so that it could be heard throughout the back of the chest and even at times down the arm to the olecranon process of the ulna. It is clear, therefore, that its detection in the back was merely a reflection of its intensity and did not indicate a concomitant coarctation of the aorta. Attention is called to this observation because the presence of a systolic murmur in the interscapular region has at times been regarded as evidence of coarctation of the aorta. In a rather extensive study of cardiac murmurs it has become apparent that any loud murmur (Grades 5 and 6) can be heard clearly in the back and that the characteristic of coarctation of the aorta is the fact that the murmur is almost as loud in the back as it is in the front of the chest. The reason for this is obvious, for in the latter condition the origin of the murmur is in the arch of the aorta, which is deep in the chest, almost as near to the back as to the front.

Apical systolic murmurs were always present in these cases. It is difficult to know whether these apical systolic murmurs had an origin other than the patent ductus arteriosus, for in most cases the basal murmurs were loud enough to be transmitted to the apex. In all, an apical systolic murmur was present which generally was of Grade 2 intensity, but occasionally fainter or louder, Grade 1, or Grade 3 or 4. It is of interest that in some patients the continuous systolic and diastolic murmur, though fainter, was also present at the apex, and in 4 cases a definite mid-diastolic murmur was audible, quite unlike the diastolic murmur heard in the pulmonic area and



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resembling a murmur of mitral stenosis. This murmur may very likely be due to the rapid inflow of blood from auricle to ventricle in early diastole.

After a successful operation one would expect the murmurs due to patent ductus arteriosus to disappear. Although this is commonly the result, it is by no means invariable. In the majority of instances no murmurs were present several days after the operation. It is not possible to examine many cases satisfactorily until a week or so has elapsed because of the surgical dressings covering the chest. In a few, postoperative pericarditis produced a to-and-fro pericardial friction rub which somewhat imitated the preoperative to-and-fro murmur of patent ductus arteriosus. In others a slight systolic murmur persisted in the pulmonary area for a few days and then disappeared in about 2 weeks. During 1938 and 1939 when the duct was ligated rather than divided, there were isolated cases of recanalization with consequent reappearance of the continuous murmur. When this occurred, the murmur was less loud than the original one. There is also an instance in which a systolic and diastolic murmur persisted along the left upper sternal border. This occurred in a case of subacute bacterial endocarditis in which vegetations were found on the aortic valve though the ductus had been ligated successfully. The most significant observation in the postoperative study was the fact that the slight pulmonic systolic murmur, Grades 1 and 2, may persist for a considerable time after successful division of the ductus. Although such murmurs may disappear within a week or two, they also may persist as long as 15 months. Such basal systolic murmurs may possibly be explained on the basis of continued dilatation of the pulmonary artery or may have the same debatable significance ascribed to other inconsequential or functional basal systolic murmurs. It is apparent that the persistence of a slight systolic murmur is not to be regarded as evidence of inefficacy of the operation. The persistence of a basal systolic and diastolic murmur may be interpreted in one of several ways, namely, recanalization of the duct, the presence of bacterial endocarditis of the aortic valve, or an additional anatomic lesion such as coarctation of the aorta or some other congenital abnormality. It is of interest that a diastolic murmur did not persist in any case in this series after successful division of the duct except for the occasional instance of bacterial endocarditis involving the aortic valve.

Thrills. A definite palpable systolic thrill, that was maximum in the second and occasionally in the first left interspace, was present in 21 of the 37 patients. It was always systolic in time but occasionally continued well into diastole. In a few instances, especially in thin-chested persons in whom the murmur was very loud, the thrill was palpable over most of the precordium, and even extended above the clavicle.

Blood Pressure. A review of the blood pressure readings before and after operation confirmed what is quite well known, namely, the pulse pressure



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is increased in patent ductus arteriosus, and the levels return to normal after treatment. The average preoperative reading in this series was systolic pressure 122.5 mm. Hg. and diastolic 57.3 mm. Hg. and the corresponding postoperative readings were 124 mm. and 78.5 mm. The pulse pressure, therefore, decreased from an average of 65.2 mm. to 45.5 mm. Hg. The range of the preoperative systolic levels was from 90 mm. to 172 mm. and the diastolic from 0 mm. to 82 mm. The corresponding postoperative range was from 100 mm. to 170 mm. systolic and from 50 to 84 mm. diastolic. It is of interest that the average systolic pressure was not altered by the operation, but the diastolic rose 20 mm. Hg. Although low diastolic pressures are characteristic of this condition, there were exceptional instances in which the diastolic pressure was as high as 75 mm. and even 82 mm. and the systolic level not over 110 mm. Hg.

Electrocardiograms. There were 34 cases in which preoperative electrocardiograms were available for study. The most important observation was that right axis deviation was found in only one instance; four showed left axis deviation; and the others had a normal electrical axis. Sinus arrhythmia was present in nine, premature ventricular beats in three, premature auricular beats in two, intraventricular block occurred in two, and a short P-R interval measuring 0.12 second with a QRS of 0.08 second in one case. There were two in which the ventricular complexes were decidedly abnormal, with inversion of the T waves in Lead 1 and Lead 2 not due to digitalis. The only electrocardiographic changes that took place postoperatively were those that could be ascribed to an associated pericarditis and accumulation of pericardial fluid that may follow the operation. Some developed a lowering or flattening of the T waves in Lead 1 and Lead 2, and in a few instances the T waves became slightly inverted. In several cases tracings taken some months later showed complexes tending to return to a preoperative configuration.

Symptoms. The presence or absence of symptoms and the type of complaints among these patients were studied. Despite the fact that there was no evidence of right to left shunt or any other congenital abnormality apart from patent ductus arteriosus in any of them, three patients were said to have been "blue babies" at birth. Thirty-one had not had their physical activities significantly restricted; five had been slightly or moderately restricted because of varying symptoms such as breathlessness, fatigability and palpitation. Breathlessness on effort of a slight to a moderate degree occurred in 14 patients, two of whom also complained of orthopnea, an additional one had paroxysmal nocturnal dyspnea. For the most part, when shortness of breath was a complaint, it consisted of a feeding of breathlessness on running, playing, or climbing stairs. In some patients these symptoms developed only in the last months or year before operation. Pain in the

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precordium was quite common, occurring in 12 patients. This did not have the character of anginal pain, generally was localized in the left breast or apical region, and was either momentarily stabbing in nature or consisted of a mild steady ache. It was not constricting or sternal in type. Palpitation was common in these patients, occurring in 16 instances. Fainting spells were noted in two, and faint cyanosis in three of this series. A past history of rheumatic fever was striking by its absence in this group, though three had a past history of nosebleeds and one of growing pains.

An attempt was made to correlate the diameter of the duct as estimated by the surgeon with the loudness of the systolic component of the murmur. The cases were divided into two groups, those in which the intensity of the systolic murmur was of Grade 4, 5, and 6, and the remainder of Grade 2 or 3. The average diameter of the former was 11.6 mm. and of the latter 9 mm. There was enough overlapping of the two groups, however, to make it impossible to predict the size of the patency by the intensity of the murmur. As an illustration of this difficulty it was found that in one patient with a Grade 5 systolic murmur, the diameter of the duct was 6.5 mm., but in two other patients with Grade 3 murmurs, the diameter was 15 mm. It is obvious that many factors are concerned such as thickness of the chest wall, hyperactivity of the heart beat, and differences in pressure in the aorta and pulmonary artery. Possibly the length of the duct apart from its width may affect the loudness of the murmur.

Conclusion. The detection and proper interpretation of the murmurs are most important in diagnosis. It was found that the murmur varied greatly in intensity and often failed to show the classical machinery character. In some patients the auscultatory findings were very inconspicuous. Electrocardiography is indirectly helpful in diagnosis since only one patient showed right axis deviation.

In doubtful or puzzling cases catheterization of the heart will be necessary to establish an accurate and definitive preoperative diagnosis. Only in this way will harmful surgery be avoided in some cases. (Am. J. M. Sc., April '47 - S. A. Levine and A. E. Geremia)

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Benadryl in the Therapy of Rheumatic Fever: Because it has been shown that benadryl is a therapeutic agent of low toxicity and considerable effectiveness in the control of a number of allergic phenomena, a study of its action upon certain manifestations of rheumatic fever was suggested by the similarity of these manifestations to those seen in known allergic states which do



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respond to this drug. The widely accepted concept of the role of hypersensitivity to Group A hemolytic streptococci in the pathogenesis of the disease and the thought that the "atropine-like" actions of Benadryl might be evidenced by effects on the electrocardiograms also recommended its trial. Theoretically, any effectiveness exhibited by this drug should be at its maximum during the onset and early phase of the course of the rheumatic fever process, although at that time evaluation would be difficult because of the fleeting nature and spontaneous remission of many of the evidences of activity. In the absence of suitable patients in the early stages of activity, it was thought desirable to select rheumatic fever patients in whom abnormal clinical or laboratory findings commonly accepted as indicative of continued activity of the rheumatic fever process had been present over a sufficient length of time to allow accurate evaluation of the effects of the drug. Beneficial results should be evidenced by amelioration of those manifestations or by an alteration of the course of the fundamental rheumatic fever process.

Sixteen patients with clinical and laboratory abnormalities attributed to continued activity of rheumatic fever were studied over a 10-week period.

Eight of these patients received Benadryl in increasing dosage up to 500 mg. daily for a 21-day period between the fifth and seventh weeks of study.

No significant alteration in the manifestations or the course of the rheumatic fever process was observed during or subsequent to Benadryl therapy.

However, following discontinuance of Benadryl an unusual syndrome occurred. Anorexia and nausea developed in all 8 patients approximately 24 hours after the last dose of Benadryl. A generalized flush was observed in 7 patients, 5 of these had an accompanying severe throbbing frontal headache, and 4 developed retching and vomiting. This syndrome became most pronounced at about 36 hours after the last dose and then gradually receded. All patients were essentially recovered at the end of 60 hours after discontinuation of Benadryl, but mild anorexia persisted in two of the patients for 7 days. (Naval Medical Research Unit #4, Dublin, Ga.)

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Control of Roaches and Bedbugs with DDT: Although it has not been definitely shown that roaches are significant vectors in the transmission of disease, their frequent occurrence in human habitations where they may contact food after encountering garbage and other filth renders it probable that diseases may be mechanically transmitted by these insects. Considerable



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evidence existed regarding the high toxicity of DDT to flies and mosquitoes, but there were contradictory reports regarding its effectiveness against roaches. Therefore, additional information on this subject was deemed desirable.

On the basis of these considerations, some work was done to determine (1) the most effective technics of applying DDT for roach control, and (2) the effectiveness of DDT against the German roach, Blattella germanica, and the American roach, Periplaneta americana.

The tests were in general designed to duplicate conditions encountered by the users of commercially distributed DDT. All experimental applications were made in operating establishments, such as houses, apartments, grocery stores, restaurants, meat markets, hotels, and hospitals. Five-percent-DDT liquid spray and 10-percent-DDT dusting powder were selected for most experimental treatments, since these concentrations now appear to be more or less standardized in commercial insecticides.

Infestations of several hundred German and American roaches were reduced to a negligible number within 1 week after treatment and further reduced after 4 weeks to a point at which, in many cases, no roaches were observed for the remainder of the 16-week study.

Against German roaches, the most satisfactory results were obtained by the use of a DDT treatment technic involving the spraying of infested rooms with 5-percent-DDT spray, followed by a thorough application of 10-percent-DDT dust to every crack from which roaches were driven by the pungent spray. The successful use of this technic required a great deal of attention in the application of dust to cracks around sinks, and in refrigerators, food cupboards, chairs, tables, or benches where food was stored, prepared, or served.

Against American roaches, over-all dusting with 10-percent-DDT powder of obvious cracks around baseboards, window frames and door frames, as well as applications in cupboards, trunks, cabinets, and drawers, resulted in effective control of American roaches which were living inside the house. American roaches entering the house from the outside were effectively controlled, at least for the duration of this study, by treating the outside breeding places, such as incinerators, garages, and garbage-disposal places, with 5-percent-DDT spray and 10-percent-DDT dust, supplemented by dusting the ground immediately surrounding the house.

In general, it can be said that American roaches were more effectively controlled with lighter dosages of DDT spray and less thorough applications

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of DDT dust than were German roaches. This was attributed partly to the difference in habits of the two species, the German roach appearing to move only short distances from its resting place, whereas the American roach moves about considerably more and therefore has greater opportunity to encounter DDT in toxic doses.

Eradication of bedbug infestations has been difficult in the past because some bedbugs would leave beds and furniture to hide in the cracks of walls and floors where they were not affected by the petroleum insecticides sprayed on the beds, mattresses, furniture, and wall surfaces. DDT overcomes this difficulty because of its lasting toxicity. Many studies already conducted have shown that DDT is the most effective insecticide yet used against bedbugs.

In this study different solvents were used, and concentrations ranging from 2 and 1/2 to 35 per cent DDT were applied in an effort to determine the importance of these factors in bedbug control when DDT is used under practical conditions, i.e., by the householder. Observations were also made on the advantages or disadvantages in the use of various types of sprayers and nozzles.

All spray applications were made in dwellings in which bedbug counts had been made on mattresses, beds, and furniture prior to spraying. After spraying, inspections were made once each week for 16 weeks. Premises were divided into groups, according to the extent of the DDT treatment applied in each house, which ranged from spraying only the mattress in the first group of houses, to spraying the entire house and furniture in the fifth group.

All methods of treatment used resulted in complete control of bedbugs for the duration of the study, 16 weeks. (Pub. Health Reps., May 9, '47 - R. L. Stenborg)

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(Not Restricted)

Infectious Hepatitis in Children and in Adults: Infectious hepatitis, which is now believed to be the same disease as catarrhal jaundice, has long been recognized as occurring sporadically and in epidemic form in both civilian and military populations. During wartime it has been prevalent among troops, particularly in places where living quarters were crowded and sanitary conditions poor. In contrast, during peacetime it is said to be primarily a disease of childhood, appearing either sporadically or in epidemics in schools, camps, and institutions. Family outbreaks involving several children are



(Not Restricted)

not uncommon. Recent investigations have resulted in certain new information on the etiologic agent, its possible manner of spread, and its prevention. Thus it has been shown in experiments employing human volunteers that the etiologic agent is filtrable and resistant to a temperature of 56° C. for thirty minutes. It is believed to be a virus. This agent is known to be present in the feces and blood of patients in the acute phase of the disease, and there is experimental evidence that the intestinal-oral route may be of importance in its spread, since the disease may be produced in human volunteers by feeding them feces from patients with the disease.

There is no reason to believe that infectious hepatitis, which appeared in large outbreaks among troops during World War II, differs from catarrhal jaundice which appears sporadically or in outbreaks among children. Experimentally there is some support for this concept furnished by immunologic evidence which shows that adult human volunteers, convalescent from hepatitis induced by the administration of a strain of virus obtained from the feces of children with the disease in the United States, were immune when reinoculated with a strain of virus derived from the stool of a soldier in the acute phase of epidemic infectious hepatitis contracted in Sicily. Both strains of virus used in this experiment also produced homologous immunity. Nevertheless, complete proof of the identity of the two diseases is lacking. This is due in part to lack of a satisfactory serologic test and susceptible laboratory animals. Experiments using human volunteers have been necessarily limited in number and therefore of limited statistical value. It has not been possible as yet to explore the occurrence of various strains of virus which may have distinct serologic characteristics. Until such investigations have been made, the identity of different outbreaks of infectious hepatitis caused by various strains of virus cannot be established.

As a result of the war experience with infectious hepatitis among troops, considerable data concerning clinical manifestations in adults have been accumulated and it is evident that there are certain differences between the characteristics of the disease as it appears in adults and children. These differences are related principally to the severity of the infection and, inasmuch as they have thus far received little emphasis, it is the object of this paper to compare the clinical course of the disease in children with that reported in adults.

Two institutional outbreaks of infectious hepatitis in children were studied. In one, fifty-three cases of hepatitis (one in an adult) with jaundice occurred, along with fifty-six cases of questionable hepatitis without icterus. In the other institution, sixty-eight persons developed hepatitis with jaundice; of these, forty-four (65 per cent) were children. In this report only those patients with jaundice and in the age group under 16 years, 96 patients, were considered.



(Not Restricted)

In the typical case in these children, the preicteric phase began abruptly with headache, fever, and gastro-intestinal symptoms. Of the last, abdominal pain and vomiting were the most prominent, with anorexia and nausea occurring less frequently. In Table I are recorded the most commonly occurring symptoms in the preicteric phase in 44 children in one outbreak with comparable tabulations for two groups of adults with infectious hepatitis.

Table I.

Symptoms	Children		Adults			
	44 Institutional Cases		167 Military Cases*		27 Experimental Cases	
	No.	%	No.	%	No.	%
Anorexia	10	22	138	82	26	96
Nausea	10	22	126	75	16	59
Vomiting	23	52	55	33	6	22
Fever	24	54	90	53	27	100
Abdominal Pain	25	56	73	42	21	77
Headache	33	75	59	35	20	74

\*Figures taken from a clinical description of infectious hepatitis in American troops.

Among the children, diarrhea and constipation were rare, as were malaise, chills, and generalized aches and pains. Usual temperatures ranged from 99.6 to 101° or 102° F. but occasionally to as high as 105° F. (rectal), the highest temperature usually being at the onset of disease and declining during the ensuing four or five days of the preicteric phase to normal. The pre-icteric period averaged about five days, after which jaundice became evident. With the appearance of jaundice, a striking amelioration of symptoms occurred. The temperature remained normal, the gastro-intestinal disturbances vanished, appetite was excellent, and the child felt quite well almost at once.

Table II on the next page shows a comparison of the duration of the pre-icteric and icteric phases and fever in three groups of patients with infectious hepatitis.

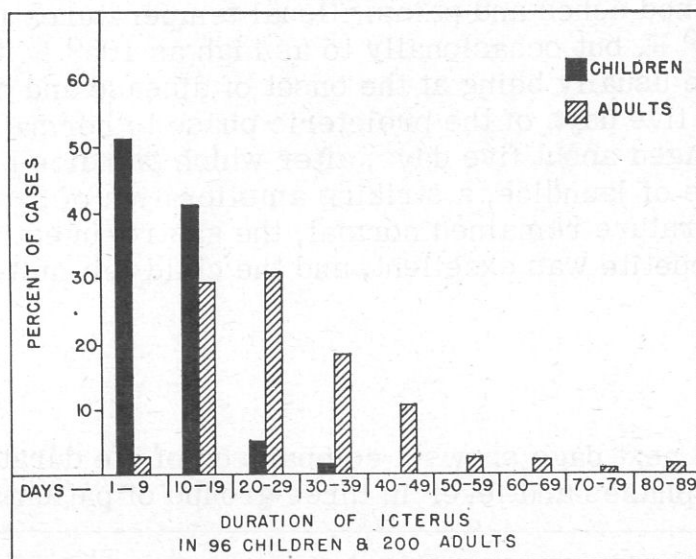
(Not Restricted)

Table II.

	Preicteric Phase			Icteric Phase			Fever		
	No.	Dura- tion (Days)	Aver- age No. Days	No.	Dura- tion (Days)	Aver- age No. Days	No.	Dura- tion (Days)	Aver- age No. Days
Children	58	1-15	4.8	96	2-32	9.8	48	1-10	3.8
Military Cases	167	1-18	5	200	4-83	27	90	2-15	5.0
Experimental Cases	27	3-21	7-2	27	8-31	20	27	4-14	7.9

The striking feature of the two outbreaks of infectious hepatitis among children was the mildness of symptoms and their short duration. Characteristically, by the time jaundice appeared these children felt well and it was difficult to keep them in bed. In contrast is the persistence of anorexia, nausea, abdominal discomfort, and often vomiting for from eight to ten days in the adult patients with a case of average severity. These facts are in agreement with the findings of others. Among the ninety-six children described there were no examples of severe hepatitis with prolonged jaundice or protracted convalescence as have been reported frequently in adults and occasionally in children. In the following chart the duration of icterus is compared in the ninety-six children and 200 adults who represent military cases of infectious hepatitis in the Middle East.

CHART I.



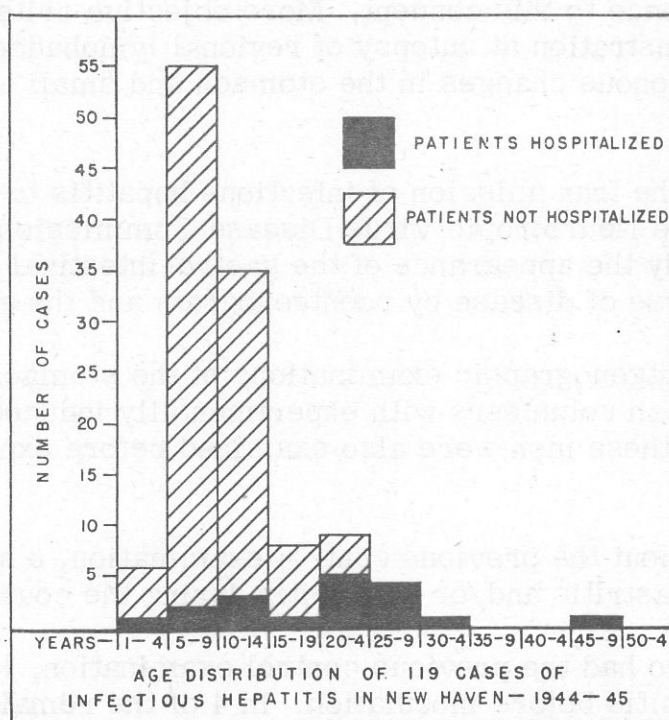


(Not Restricted)

The majority of children in this series fall in the "mild disease" group. The highest icterus index found was forty-seven units, and in only six (6.3 per cent) of the total ninety-six patients comprising both groups of children did jaundice persist for more than nineteen days. There were no deaths from infectious hepatitis in the juvenile group.

In New Haven, during the winter of 1944-1945, when one of the institutional outbreaks occurred, 119 additional cases were reported in the city. Of these, only nineteen (16 per cent) were in persons over 16 years of age. The chart below illustrates the age distribution of these cases, and calls attention to the fact that, of the nineteen patients whose disease was serious enough to require hospitalization, thirteen (69 per cent) were in the adult group. Thus, as in other civilian outbreaks, a certain number of cases occurred in adults, and the adults seemed to have a more severe disease.

CHART 2.



Although there were no severe cases among the children studied in these outbreaks, such cases do occur, and examples of prolonged jaundice with relapses and even death have been reported in children.

(Not Restricted)

The difference between the severity of infectious hepatitis in children and in adults is comparable to the difference which exists between the childhood and adult forms of the more common virus infections. Measles, mumps, and chicken pox are all likely to be more severe and attended by more severe complications in the adult than in the child. (J. Pediat., April '47 - D. M. Horstmann et al.)

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(Not Restricted)

Study of G-I Tract Involvement in Experimentally Induced Infectious Hepa-

titis: The occurrence of anorexia, nausea, vomiting, and abdominal pain during the preicteric and early icteric phases of infectious hepatitis has suggested that involvement of the gastro-intestinal tract may be an important feature of this disease. The fact that the etiologic agent of infectious hepatitis is eliminated in the stools of patients in the acute phase of the disease and may be transmitted experimentally by feeding such material to human volunteers adds supporting evidence to this concept. More objective criteria have been afforded by the demonstration at autopsy of regional lymphadenopathy as well as edema and phlegmonous changes in the stomach and small and large bowel in fatal cases.

Experiments in the transmission of infectious hepatitis to human volunteers conducted by the Neurotropic Virus Disease Commission have offered an opportunity to study the appearance of the gastro-intestinal tract at various times during the course of disease by roentgenogram and the gastroscope.

In this study roentgenographic examinations of the stomach and duodenum were made on 21 human volunteers with experimentally induced infectious hepatitis. Twelve of these men were also examined before experimental inoculation.

Of the 9 men without the previous control examination, 3 had roentgenographic evidence of gastritis and/or duodenitis during the course of hepatitis.

Of the 12 men who had the previous control examination, 1 showed evidence of gastroduodenitis before inoculation. In 4 of the remaining 11 there developed roentgenologic evidence of gastritis and/or duodenitis during the early phase of disease.

Six of these men had gastroscopic examination before inoculation and during the acute and convalescent phases of disease. Of these, gastroscopic evidence of acute superficial gastritis, which receded during convalescence, developed in 3.



(Not Restricted)

No particular correlation was found between roentgenologic and gastroscopic changes in human volunteers with experimentally induced infectious hepatitis.

The gastroscopic findings indicate that acute inflammation of the wall of the stomach is one of the lesions of the acute stage of infectious hepatitis. Evidences of this lesion may last into convalescence. (Arch. Int. Med., April '47 - W. P. Havens, Jr., et al.)

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(Not Restricted)

Submarine Medicine and Basic Research Training: Applications are desired to reach BuMed prior to 1 July 1947 from medical officers of the regular Navy of the rank of commander or below for a course in submarine and diving medicine. The course is of 8 and 1/2 months' duration, beginning 1 October 1947 at the Deep Sea Diving School, Naval Gun Factory, Washington, D. C., for ten weeks and then at the Submarine School, Submarine Base, New London, Conn., for six months. Applicants must be physically qualified in accordance with Paragraph 21133, Manual of the Medical Department, and not over thirty-five (35) years of age and free of all chronic disease. Applications must be accompanied by completed Form NavMed Y.

Training in submarine and diving medicine constitutes an excellent background for later assignment in all branches of medical research, a fact which should be considered by applicants who may desire assignment later in branches of medical research other than submarine and diving medicine. Although it is desired that graduates of the school devote at least one assignment to the specialty involved, they will not be required to remain or be "frozen" in this specialty and may be transferred to duty in other fields of medicine upon request.

Twenty-five per cent (25%) additional base pay is granted to trainees during the entire period of instruction at the Deep Sea Diving School. Fifty per cent (50%) additional base pay is granted to trainees during the period of instruction at the Submarine Base, New London, for days actually aboard vessels. Fifty per cent (50%) additional base pay is made to medical officers completing the course, and subsequently qualifying, upon assignment as squadron medical officers. Twenty-five per cent (25%) additional base pay is available to medical officers receiving assignments to the Experimental Diving Unit, Naval Gun Factory, Washington, D. C., Deep Sea Diving School, Naval Gun Factory, Washington, D. C., and Submarine Escape Training Tanks, New London, Connecticut, and Pearl Harbor, T. H.

Reserve medical officers may also apply for this training provided they submit a request for transfer to the regular Navy at the same time the application for the course is submitted. (Professional Div., BuMed)

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(Not Restricted)

Training in Neuropsychiatry, Neurology, and Electroencephalography: There are several residencies available in neuropsychiatry in naval hospitals which have not been filled. Reserve medical officers are eligible for consideration, providing their request for training is accompanied by an application for transfer to the regular Navy. Residencies are for a period of one



(Not Restricted)

year plus an additional year for those medical officers who show an acceptable amount of interest and aptitude for further training. Courses in electroencephalography are now open. There is a residency in neurology available for interested candidates. Requests for any of the above can be submitted at this time. (Professional Div., BuMed)

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(Not Restricted)

Postgraduate Training in Internal Medicine in Civilian Institutions: Requests are desired from medical officers of the regular Navy for courses in internal medicine, including cardiology, in civilian institutions as announced in the Bumed News Letter dated 31 January 1947. Medical officers who are interested in further training in internal medicine should refer to that announcement. The institutions involved are Cornell University Medical School, the State University of Iowa College of Medicine, the University of Pennsylvania Graduate School of Medicine, and Massachusetts General Hospital. Requests should include a signed three-year agreement. (Professional Div., BuMed)

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(Not Restricted)

Residencies in Psychiatry at the U.S. Public Health Service Hospital, U.S. Naval Unit, Fort Worth, Texas: In order to provide interested medical officers with further information regarding a one- or two-year residency at the above-named hospital, the Professional Division, BuMed, desires to supplement its notice as published on page 27 of the Bumed News Letter dated 25 April 1947. The Fort Worth hospital is approved by the American Board of Psychiatry and Neurology and by the Council on Medical Education of the American Medical Association for two years of residency training. Besides the Medical Officers of the Navy Unit attached to the hospital who have been certified by the American Board of Psychiatry and Neurology, several members of the U.S. Public Health Service Staff have also been certified.

The training consists of seminars and instruction in the subjects basic to psychiatry, such as schools of psychiatric thought, mental mechanisms, psychopathology, and similar subjects. In addition to this, instruction is given in neuroanatomy, neuropathology, and neurophysiology. Part of this instruction is given at the Fort Worth hospital and part at the Southwestern Medical College at Dallas, Texas, through the courtesy of that medical school. Several members of the Fort Worth staff are on the faculty at Southwestern. There is close and careful supervision of ward work carried on by the residents. Included in the instruction on the various forms of psychotherapy and their practical applications are such technics as those of insulin and electric shock treatment which are demonstrated to the resident MO's and are later

(Not Restricted)

carried out by them under supervision. Some experience in out-patient work is available by arrangement with the Fort Worth Health Department. This consists principally of work with problem children. It is planned that in the near future out-patient experience with adults will be available either at the hospital or in the city. (Professional Div., BuMed)

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(Not Restricted)

Clarification of Terms Used in Connection with Atomic Energy and Announcement of Course Available: There is considerable confusion, or misinterpretation of certain terms now in use in connection with various aspects of atomic energy.

"Radiological Safety" implies the protection of personnel against the hazards of ionizing radiation. It includes the evaluation of radiation hazards, the intensity or extent of which are determined by the employment of suitable detecting instruments. "Monitors," usually nonmedical personnel, are "Meter Readers." They are trained to use and read the geiger counters, ion chambers, electrosopes, etc. The "Photographic Dosimetrist" is one who has been taught to determine the amount of radiation to which an individual has been exposed over a known period by the degree of darkening of a "film badge" worn by that individual. It is the duty of the medical officer to interpret these findings and inform the "Radiological Safety Officer" regarding the degree of danger to personnel involved.

The "Radiological Safety Laboratory" provides facilities for the physical examination of personnel and the interpretation of physical findings (including blood pictures) in terms of possible damage. Also in this laboratory "Radiochemists" and "Radiophysicists" carry out the processing of film badges and the analysis of substances which have been found to be radioactive. The effects of the ionizing radiations in tissue are studied by the "Radiobiologist." The investigation of the behavior of certain elements such as calcium, carbon, iodine, etc., which have been made artificially radioactive, in organs and tissues of animals or plants, is known as "Tracer Study."

A short course at the University of California Medical School in the application of radioactive substances in the medical and biological sciences is available to selected medical officers of the regular Navy. Trainees should be young medical officers who have shown considerable aptitude in internal medicine.

Other courses of postgraduate instruction in all of these specialized fields will be made available from time to time by the Professional Division, BuMed, and suitable announcements will be made. Inquiries are invited from



(Not Restricted)

interested personnel. It is to be particularly noted that most of these fields are not limited to a study of the atomic bomb and its effects but cover a vast field of internal medicine and research. (Professional Div., BuMed)

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(Not Restricted)

Changes to be Made in Copies of Manual of the Medical Department: Certain changes in the Manual of the Medical Department have been directed as specified in Circular Letters 47-63, page 29; 47-65, page 31; and 47-66, page 32.

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(Not Restricted)

Opportunities for Naval Reserve Medical Officers: The attention of Reserve medical officers is invited to the opportunity to return to active duty at one of the major naval air stations of the Naval Air Reserve Training Command or at one of the Naval Air Reserve Training Units (NARTUs) listed below:

NAS, Atlanta, Ga.  
 NAS, Columbus, Ohio  
 NAS, Dallas, Texas  
 NAS, Denver, Colo.  
 NAS, Glenview, Ill.  
 NAS, Grosse Ile, Mich.  
 NAS, Los Alamitos, Calif.  
 NAS, Memphis, Tenn.  
 NAS, Miami, Fla.  
 NAS, Minneapolis, Minn.  
 NAS, New Orleans, La.

NAS, New York, N.Y.  
 NAS, Oakland, Calif.  
 NAS, Olathe, Kas.  
 NAS, Squantum, Mass.  
 NAS, St. Louis, Mo.  
 NAS, Willow Grove, Pa.  
 NARTU, NAS, Anacostia, D.C.  
 NARTU, NAS, Jacksonville, Fla.  
 NARTU, NAS, Norfolk, Va.  
 NARTU, NAS, Seattle, Wash.

Reserve medical officers who are interested in active duty at one of the stations or units listed above should initiate letters to the Bureau of Naval Personnel, via Chief of Naval Reserve Air Training, Naval Air Station, Glenview, Ill., and BuMed, listing three or four stations at which duty is desired in order of preference. Personnel are desired in rank of commander and below in the Medical Corps. However, captains may apply for this duty and, in their applications, request a waiver of the rank requirement.

Officers qualifying for the above billets may terminate the tour of duty at their own request. It is anticipated that all orders to flight surgeons will include duty involving flying. Government quarters are available at several of the major naval air stations.

Naval Reserve flight surgeons who desire to join one of the Naval or Marine combat air groups of the Organized Reserve, training at one of the

(Not Restricted)

stations listed above, should contact the local commanding officer for additional information. Two months pay per year is granted for attendance at all training periods. (Personnel Div., BuMed)

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(Not Restricted)

Public Health Foreign Reports:

<u>Disease</u>	<u>Location</u>	<u>Date</u>	<u>No. of Cases</u>
Cholera	India, Calcutta	March 29-April 5, '47	147
		April 13-19, '47	441 (146 fatal)
	Siam (Thailand)	March 9-29, '47	409 (247 fatal)
Plague	Brazil	September '46	29 (6 fatal)
	China, Amoy	March 29-April 5, '47	1
	Kiangsi Prov.	April 21, '47 (date rep.)	2
	Madagascar	February '47	59 (49 fatal)
		March '47	24 (23 fatal)
	Peru	December '46	7 (3 fatal)
		February '47	26 (7 fatal)
	Syria, Euphrates Prov., Wasta	April 11, '47 (date rep.)	6 (4 fatal)
	Turkey (in Asia), Urfa Prov., Akcakale	March 23-April 12, '47	13 (3 fatal)
Smallpox (alastrim)	Belgium, Liege	April 19, '47 (date rep.)	16
	Burma	March 9-29, '47	586 (299 fatal)
	China, Shanghai	March 29-April 5, '47	122 (23 fatal)
	Colombia	March '47	225 (2 fatal)
	Egypt, Alexandria	March 2-15, '47	66
	Great Britain	March 15-22, '47	1
		March 29-April 5, '47	2
		March 5, 23, and 25, '47 (date reports)	3 suspected
		April 14, '47 (date rep.)	7
	Indochina (French)		
	Cochinchina	March 11-20, '47	129 (88 fatal)
	Ivory Coast	March 1-10, '47	133 (3 fatal)
	Libya, Tripoli	March 16-22, '47	178 (13 fatal)
	Malay States (Federated)	March 29-April 5, '47	114 (33 fatal)



(Not Restricted)

Public Health Foreign Reports (Cont.):

<u>Disease</u>	<u>Location</u>	<u>Date</u>	<u>No. of Cases</u>
Smallpox	Morocco (Inter-national Zone)		
	Tangier	Feb. 16-22, '47	14
	Niger Territory	March 11-20, '47	221 (20 fatal)
	Siam (Thailand)	March 7-15, '47	90 (10 fatal)
	Sierra Leone	Feb. 16-22, '47	53 (5 fatal)
	Tunisia	Feb. 11-March 10, '47	167
Typhus Fever	Algeria	Jan. 21-Feb. 20, '47	98
	Colombia	March '47	159 (3 fatal)
	Tunisia	Feb. 11-March 10, '47	70
	Union of S. Africa	January '47	41
Yellow Fever	Colombia, Santander Dept.	Feb. 14, 17, and 24-March 2, '47 (date reps.)	4 (fatal)

(Pub. Health Reps., May 2, 9, and 16, '47)

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ALNAV 121

19 May 1947

(Not Restricted)

Subj: New Hospital Ration-Reimbursement Rate

Reimbursement rate of hospital ration established at 91.5 cents per ration. Effective 1 June subsistence checkages for officers and nurses, active and retired, shall be effected by means of NavSanda Form 534 hospital ration notice at above rate. Local collections for subsistence furnished supernumerary patients in naval hospitals in accordance with instructions BuMed Ltr 44-91 shall be made at above rate. Effective 1 June at other than naval hospitals net earned amounts received locally for hospitalization of supernumerary patients shall be deposited with disbursing officer for ultimate credit as follows: to appropriation charged for cost of furnishing subsistence at rate of 91.5 cents per diem, remaining amount collected per diem to be deposited for ultimate credit to appropriation Medical Department Navy. Odd ration to be charged at rate of 92 cents. All instructions regarding rate and value of hospital ration or subsistence in kind furnished patients in naval medical facilities modified accordingly. Above instructions not applicable to rations sold hospital staff personnel in naval hospitals.

--SecNav. James Forrestal

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ALNAV 122

19 May 1947

(Not Restricted)

Subj: Blood Study on Operation Crossroads Personnel

It is directed that complete blood count be performed on all personnel now on active duty who were attached to Operation Crossroads or Navy Radiological Safety Program.

All cases of abnormal blood counts shall be repeated. Forward results of all examinations to Bureau of Medicine and Surgery Code 74 with personal data as full name, rate or rank, service number, date, location of examination, and approximate time attached to Operation Crossroads and/or Radiological Safety Program.

--SecNav. James Forrestal

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Circular Letter 47-63

13 May 1947

(Not Restricted)

To: Ships and Stations having Dental Departments

Subj: Paragraph 1333.7, Manual of the Medical Department, change in

1. The following change to the Manual of the Medical Department is effective immediately:

Delete paragraph 1333.7. and substitute the following:

1333.7. Every effort consistent with station efficiency shall be made to salvage precious metal scrap derived from the practice of dentistry. In January and July of each year or upon decommissioning or disestablishment, the dental officer of a ship or station shall forward, for disposal, all material of the following types to the U. S. Naval Medical Supply Depot, Brooklyn 1, New York, or the U. S. Naval Medical Supply Depot, Oakland 4, California, whichever is nearer: (1) Silver amalgam scrap, (2) Gold alloy scrap, (3) Platinum scrap, (4) Precious metal bench grindings and sweepings, (5) Precious metal polishing residue. Materials of each type shall be weighed, packaged separately, marked, and shipped either by registered mail or on a bill of lading issued by a Supply Officer. An itemized record shall be kept of each shipment.

--BuMed. H. L. Pugh

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Circular Letter 47-64

16 May 1947

(Not Restricted)

To: All Medical Department Activities

Subj: Motor-Vehicle Accident Record, Medical Department

Refs: (a) BuMed CircLtr 41-40

(b) SecNav ltr OIR-562 of 3 May 1946; Navy Dept. Bulletin of 15 May 1946, 46-969

Encl: 1. (HW) Safety Rules for Ambulances

(Not Restricted)

This letter from the Acting Chief of BuMed directs that immediate action be taken by addressees to lower the present comparatively high accident rate for Medical Department motor vehicles. Reference (a) is superseded. The basic set of rules contained in the enclosure (see copy below) are to be followed in regulating the use and operation of ambulances. The responsible Medical Department officers concerned are to submit to the Bureau by 1 August 1947 a report outlining the definite action taken in enforcing the safety rules for ambulances.

1 May 1947

Safety Rules for Ambulances

1. Ambulances shall be used only for transportation of sick, injured, or wounded persons.
2. Emergency runs shall be restricted insofar as practicable.
3. Only Commanding Officers, their representatives, or Senior Duty Officers may authorize emergency runs. Each emergency run shall be fully recorded in the duty log of the Medical Department having cognizance.
4. Ambulances shall be in good mechanical condition at all times. All equipment shall be operative, and standard according to local practices.
5. Drivers shall have a U. S. Navy motor vehicle operator's permit as required by SecNav ltr OIR-562:WMM 406 of 3 May 1946; N. D. Bul. 46-969.
6. Drivers shall be fully conversant with local traffic regulations and local geography. Close questioning by the Transportation Officer is essential in this connection.
7. Each ambulance shall carry a book or board embodying carefully considered orders and safety precautions prescribed by the local command for the locality, and similar orders shall be posted in the garage. Each ambulance shall carry forms for reporting accidents and the drivers shall be instructed as to their use.
8. A limiting speed shall be set for each ambulance for any and all circumstances according to local traffic regulations and conditions.



(Not Restricted)

9. All ambulance drivers must satisfy state and municipal requirements as to age and/or other qualifications.

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Circular Letter 47-65

16 May 1947

(Not Restricted)

To: All Ships and Stations having Dental Departments.

Subj: NAVMED-461 (Rev. 4-47), Semiannual Dental Report, Replacing the Quarterly Dental Report.

1. NAVMED-461 (Rev. 4-47), Semiannual Dental Report, replaces the NAVMED-461, Quarterly Dental Report, effective this date. No Quarterly Dental Report is to be submitted for the quarter ending 30 June 1947, or thereafter. Initial distribution of the new NAVMED-461 is being made to dental commands and to activities having dental departments. Additional copies will be available upon request from the nearest District Publications and Printing Office. All stocks of previously printed NAVMED-461 forms are to be disposed of locally. The first Semiannual Dental Report shall be submitted 1 October 1947 in accordance with instructions printed on form.

2. Pending issuance of printed page changes, the Manual of the Medical Department is modified as follows:

Delete paragraph 1339 and substitute the following:

1339

**NAVMED-461 (Semiannual Dental Report).--The dental officer shall submit NAVMED-461 in duplicate to the Chief of the Bureau on 1 April and 1 October. NAVMED-461 shall be prepared in quintuplicate in accordance with instructions printed on the form.**

Paragraph 513, tabulation of numbered forms, opposite NAVMED-461, change "Quarterly" to "Semiannual"; change "triplicate" to "Duplicate".

In index, under "DENTAL REPORTS", change "Quarterly" to "Semiannual".

In index, under "NAVMED-461", change "QUARTERLY" to "SEMIANNUAL".

In index, under "QUARTERLY", delete "QUARTERLY DENTAL REPORT. See NAVMED-461" and insert, in proper alphabetical position, "SEMIANNUAL DENTAL REPORT. See NAVMED-461".

(Not Restricted)

In index, under "REPORTS", delete "Quarterly Dental. See NAVMED-461" and insert, in proper alphabetical position: "Semiannual Dental. See NAVMED-461".

--BuMed. H. L. Pugh

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Circular Letter 47-66

26 May 1947

(Not Restricted)

To: All Holders of the Manual of the Medical Department

Subj: Manual of the Medical Department, 1945; advance change No. 3

Ref: (a) Article 74, U. S. Navy Regulations, 1920

This letter from the Chief of BuMed directs the following changes in the Manual of the Medical Department, effective immediately:

Delete paragraph 12B11.5(c), Item 74, and substitute the following:

**74. Doctor's order book, Casualty log, Temperature, Pulse, Respiration Book, Evacuee log, Ward logs, Medical Officers' Memoranda, Laboratory log, Ward order book, Sick call log, and other similar temporary logs.**

**Retain.**

Note: Paragraph 12B11.5(c) is contained in manual page changes not yet but soon to be distributed. --Ed.

Add the following paragraphs:

12C17.4. Doctor's Order Book.--See paragraph 515.3(a).

12C17.5. Sick Call Log.--See paragraph 515.3(c)(1).

12D4.3. Ward Order Book.--See paragraph 515.3(b).

12D4.4. Sick Call Log.--See paragraph 515.3(c)(1).

16A28.5. Doctor's Order Book.--See paragraph 515.3(a).

16A34.13. Ward Order Book.--See paragraph 515.3(b)



(Not Restricted)

Delete paragraph 12C17.2 and substitute the following:

12C17.2. Binnacle List.--A list of the names of those he recommends excused from duty shall be submitted by the medical officer to the commanding officer daily by 0930. The binnacle list shall be approved by the commanding officer, and no names may be added without his permission (Arts. 1154, 1322(1), Navy Regulations). See paragraph 515.3(c)(1).

Delete paragraph 515.3 and substitute the following:

515.3(a). Doctor's Order Book.--The ward medical or dental officer in each hospital, dispensary or ship's sick bay shall maintain a Doctor's order book, in which treatments and medications ordered for patients shall be entered in ink and shall be signed by the medical officer issuing the orders. The medical or dental officer shall sign each order for narcotics and poisons; and the medical officer shall sign an order for drugs for installation in the eye, when the order is given. (See par. 12B20.2.)

(b) Ward Order Book.--The nurse, or senior hospital corpsman, in charge of a ward in a hospital, dispensary, or ship's sick bay shall maintain a Ward Order Book in which treatments and medications ordered for patients shall be logged in ink, when ordered and when given. The Ward Order Book shall be reviewed daily and approved or commented upon in ink by the Ward Medical Officer.

(Not Restricted)

(Not Restricted)

(c) Sick Call Log.--(1) The Medical Officer in each dispensary, ship's sick bay, or other ambulatory sick call station shall maintain a Sick Call Log. The date and time; the rank or rate and condition of the patient; the diagnosis or chief complaint, orders and treatment; and other information which cannot be placed in the health record immediately, shall be entered in ink for each patient being treated for a condition not requiring admission to the sick list. An order, and a properly executed prescription, shall be signed by the medical officer at the time a narcotic is given. The Sick Call Log shall be reviewed and approved or commented upon in writing by the medical officer conducting the sick call at the end of each sick call period.

(2) When a patient is placed upon the binnacle list pursuant to treatment for a condition not requiring admission to the sick list, an entry shall be made in the Sick Call Log to that effect under the record of treatment given. (See par. 2220.7.)

Delete paragraph 2220.1 and substitute the following:

Entries Upon Admission to Sick List.--2220.1. Entries shall be made on NAVMED-H-8 when an individual is admitted to the sick list and to the Binnacle List.

Add paragraph 2220.7:

2220.7. When a person has been upon the binnacle list pursuant to treatment for a condition not requiring admission to the sick list, an entry on NAVMED-H-8 showing the date, diagnosis if established (or if not, a brief description of the presenting symptoms), duration and type of treatment, and the condition of the patient after treatment shall be signed by the medical officer for insertion in the health record.

Note: A copy of this letter is being sent to all ships and stations, and persons officially holding the Manual.

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Circular Letter 47-67

23 May 1947

(Not Restricted)

To: MedOfCom, NavHosps (Continental Limits)

Subj: American Red Cross 16mm Ward Motion Picture Program,  
comments concerning.

Ref: (a) BuMed CirLtr 44-227, dtd 10 Nov 1944.

This letter from the Chief of BuMed states that (1) efforts should be made to prevent cancellation of scheduled showings insofar as possible, and (2) every precaution should be taken to prevent damage to the films and projecting machines. To accomplish these objectives, several corpsmen at each hospital should be instructed in the operation of the projectors and in the correct handling of the film. Consideration may also be given to the training of selected convalescent patients for this duty, under close supervision, when the services of trained hospital corpsmen cannot be made available for this purpose.

\* \* \* \* \*

Op24B/glb,  
Serial 308P24

13 May 1947

(Not Restricted)

To: All Ships and Stations

Subj: U.S. Naval Administrative and Disestablishment Unit, Ex-Naval  
Hospital, Norfolk, Va. - Establishment of

1. The following activity is established, under a medical officer in command, effective 15 May 1947:

U.S. Naval Administrative and Disestablishment Unit,  
Ex-Naval Hospital,  
Norfolk 11, Virginia.

1102-500

This unit is under the military command and coordination control of the Commandant, Fifth Naval District, and under the management control of the Bureau of Medicine and Surgery.

2. Bureaus and offices concerned take necessary action.

--SecNav. James Forrestal

\* \* \* \* \*

(Not Restricted)

Delete paragraph 12C17.2 and substitute the following:

12C17.2. Binnacle List.--A list of the names of those he recommends excused from duty shall be submitted by the medical officer to the commanding officer daily by 0930. The binnacle list shall be approved by the commanding officer, and no names may be added without his permission (Arts. 1154, 1322(1), Navy Regulations). See paragraph 515.3(c)(1).

Delete paragraph 515.3 and substitute the following:

515.3(a). Doctor's Order Book.--The ward medical or dental officer in each hospital, dispensary or ship's sick bay shall maintain a Doctor's order book, in which treatments and medications ordered for patients shall be entered in ink and shall be signed by the medical officer issuing the orders. The medical or dental officer shall sign each order for narcotics and poisons; and the medical officer shall sign an order for drugs for installation in the eye, when the order is given. (See par. 12B20.2.)

(b) Ward Order Book.--The nurse, or senior hospital corpsman, in charge of a ward in a hospital, dispensary, or ship's sick bay shall maintain a Ward Order Book in which treatments and medications ordered for patients shall be logged in ink, when ordered and when given. The Ward Order Book shall be reviewed daily and approved or commented upon in ink by the Ward Medical Officer.

(Not Restricted)

Complete paragraph 12.1.3 and enclosing the following:

12.1.3. Medical Officer's List - A list of the names of those he recommends for removal from duty shall be submitted by the medical officer to the commanding officer daily by 0800. The medical officer shall be approved by the commanding officer, and no names may be added without his permission (Para. 12.1.2.1). (See paragraph 12.1.2.1.1).

Complete paragraph 12.1.3 and enclosing the following:

12.1.3.1. Medical Officer's Order Book - The medical officer shall maintain in each medical dispensary a book in which he shall enter a record of all medical orders in which treatment and medication are ordered for patients. The medical officer shall enter each order for medication or treatment and the medical officer shall sign and initial each order for medication in the book. When the order is given (See para. 12.1.3.1.1).

(c) First Order Book - The medical officer shall maintain in each of a ward in a hospital, dispensary, or clinic a book in which he shall enter a record of all medical orders in which treatment and medication are ordered for patients. The book shall be kept in the ward, dispensary, or clinic. The medical officer shall sign and initial each order for medication in the book. When the order is given (See para. 12.1.3.1.1).



(Not Restricted)

(c) Sick Call Log.--(1) The Medical Officer in each dispensary, ship's sick bay, or other ambulatory sick call station shall maintain a Sick Call Log. The date and time; the rank or rate and condition of the patient; the diagnosis or chief complaint, orders and treatment; and other information which cannot be placed in the health record immediately, shall be entered in ink for each patient being treated for a condition not requiring admission to the sick list. An order, and a properly executed prescription, shall be signed by the medical officer at the time a narcotic is given. The Sick Call Log shall be reviewed and approved or commented upon in writing by the medical officer conducting the sick call at the end of each sick call period.

(2) When a patient is placed upon the binnacle list pursuant to treatment for a condition not requiring admission to the sick list, an entry shall be made in the Sick Call Log to that effect under the record of treatment given. (See par. 2220.7.)

Delete paragraph 2220.1 and substitute the following:

Entries Upon Admission to Sick List.--2220.1. Entries shall be made on NAVMED-H-8 when an individual is admitted to the sick list and to the Binnacle List.

Add paragraph 2220.7:

2220.7. When a person has been upon the binnacle list pursuant to treatment for a condition not requiring admission to the sick list, an entry on NAVMED-H-8 showing the date, diagnosis if established (or if not, a brief description of the presenting symptoms), duration and type of treatment, and the condition of the patient after treatment shall be signed by the medical officer for insertion in the health record.

Note: A copy of this letter is being sent to all ships and stations, and persons officially holding the Manual.

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Circular Letter 47-67

23 May 1947

(Not Restricted)

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\* \* \* \* \*

Op24B/glb,  
Serial 308P24

13 May 1947

(Not Restricted)

To: All Ships and Stations

Subj: U.S. Naval Administrative and Disestablishment Unit, Ex-Naval  
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1. The following activity is established, under a medical officer in command, effective 15 May 1947:

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This unit is under the military command and coordination control of the Commandant, Fifth Naval District, and under the management control of the Bureau of Medicine and Surgery.

2. Bureaus and offices concerned take necessary action.

--SecNav. James Forrestal

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